

REMARKS

Applicant has incorporated into claim 1 the limitation recited in claim 5. Note that Applicant has rewritten the incorporated limitation to promote clarity, support of which can be found at page 5, lines 15-30 of the Specification. This amendment has necessitated cancellation of claim 5. Finally, Applicant has corrected minor deficiencies in claims 4, 6, and 10-12. No new matter has been introduced by the above amendments.

Claims 1-4 and 6-13 are currently pending. Reconsideration of the application, as amended, is requested in view of the remarks below.

Claim objection

Claims 4, 6, and 10-12 are objected to as containing informalities. Specifically, the Examiner points out that in claims 4 and 6, "ZSMS" should be "ZSM-5;" and in claims 10-12, "Acatalyst" should be "A catalyst." See the Office Action, page 2, lines 3-5. Applicant has rectified both informalities pursuant to the Examiner's suggestions.

Rejection under 35 U.S.C. § 112, 2<sup>nd</sup> paragraph

Claims 5 and 6 are rejected as being indefinite. Specifically, the Examiner indicates that "[t]he parenthetical expressions render the claims indefinite because it is not clear if these limitations are required by the claims, ..." See the Office Action, page 2, lines 13-14. Applicant has cancelled claim 5 and corrected the deficiency in claim 6.

Rejection under 35 U.S.C. § 102(b)

Claims 1-6, 9-11, and 13 are rejected as being anticipated by Nakatsuji et al., U.S. Patent 5,733,837 ("Nakatsuji"). See the Office Action, page 2, lines 22-23.

Applicants has cancelled claim 5 and will only address claims 1-4, 6, 9-11, and 13. Independent claim 1 is discussed first. Claim 1, as amended, covers a catalyst that includes a zeolite ion exchanged with cerium and deposited with cerium oxide together with platinum, palladium, or a mixture thereof. In the catalyst, the weight ratio of cerium oxide calculated based on the total amount of the cerium in the catalyst to the zeolite is 0.1-3% by weight based on the weight of the zeolite. The total amount of the cerium in the catalyst includes the amount

of the cerium exchanged onto the zeolite and the amount of cerium in the deposited cerium oxide. In other words, the catalyst contains less than 3% by weight of the deposited cerium oxide based on the weight of the zeolite.

Nakatsuji describes a catalyst for reducing nitrogen oxides. The catalyst includes (a) at least one element from one or more of Group Ib, Group IIa, Group IIIa, Group IIIb, Group IVa, Group IVb, Group Va, Group VIa, Group VIIa, and Group VIII in the Periodic Table and (b) cerium oxide supported on a solid carrier (corresponding to the deposited cerium oxide recited in claim 1). See, e.g., the Abstract. The solid carrier includes zeolite type solid carriers. See column 2, lines 25-27. Nakatsuji also describes that a suitable cerium oxide supporting ratio is at least 5% by weight based on the total amount of the cerium oxide and the solid acid carrier (e.g., a zeolite type solid carrier).<sup>1</sup> See column 4, lines 36-39. The cerium oxide supporting ratio refers to the weight ratio of the amount of the cerium oxide to the total amount of the cerium oxide and the solid acid carrier. See column 4, lines 39-42. In other words, the catalyst described in Nakatsuji contains at least about 5.2% by weight (i.e.,  $5\%/(100\%-5\%) = 5.2\%$ ) of cerium oxide based on the weight of the solid acid carrier. By contrast, as mentioned above, the catalyst of amended claim 1 contains less than 3% by weight of the deposited cerium oxide based on the weight of the zeolite (i.e., a solid acid carrier). Thus, amended claim 1 is not anticipated by Nakatsuji. Neither are claims 2-4, 6, 9-11, and 13, all of which depend from claim 1.

#### Rejection under 35 U.S.C. § 103(a)

Claims 7 and 8 are rejected as being obvious over Nakatsuji. See the Office Action, page 3, lines 20-21.

Rejected claims 7 and 8 depend from claim 1. Like claim 1, they cover a catalyst containing less than 3% by weight of the deposited cerium oxide based on the weight of the zeolite.

As discussed above, Nakatsuji describes a catalyst having a cerium oxide supporting ratio of at least 5% by weight, i.e., containing at least about 5.2% by weight of cerium oxide based on the weight of the zeolite. Further, Nakatsuji describes that “if the cerium oxide supporting ratio

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<sup>1</sup> More specifically, Nakatsuji describes that the suitable cerium oxide supporting ratio is 5-80% by weight based on the total amount of the cerium oxide and the solid acid carrier.

is less than 5% by weight, the reducing activity of the catalyst cannot be increased as expected.” See column 4, lines 46-49. To the extent that Nakatsuji teaches that it is undesirable for a catalyst to contain less than 5.2% by weight of cerium oxide based on the weight of the zeolite, it teaches one skilled in the art away from a catalyst containing less than 3% by weight of the deposited cerium oxide based on the weight of the zeolite, as required by amended claim 1. Thus, claim 1 is not rendered obvious by Nakatsuji. Neither are claims 7 and 8, both of which depend from claim 1.

Rejection under 35 U.S.C. § 102(b)/103(a)

Claim 12 is rejected as being anticipated by or, in the alternative, as being obvious over Nakatsuji. See the Office Action, page 4, lines 10-11.

Rejected claim 12 depends from claim 1. Like claim 1, it covers a catalyst containing less than 3% by weight of the deposited cerium oxide based on the weight of the zeolite.

As discussed above, claim 1 is not anticipated or rendered obvious by Nakatsuji. Neither is claim 12 dependent from claim 1.

CONCLUSION

Applicant submits that the grounds for rejection asserted by the Examiner have been overcome, and that claims 1-4 and 6-13, as pending, define subject matter that is definite, novel, and nonobvious. On this basis, it is submitted that all claims are now in condition for allowance, an action of which is requested.

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Enclosed is a check for the Petition for Extension of Time fee. Please apply any other charges to deposit account 06-1050, referencing Attorney's Docket No.: 13298-010001.

Respectfully submitted,

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